

REMARKS

Claims 1-28 are pending in this application. By this Amendment, claims 1, 2, 5, 6 and 9 are amended. Claims 1, 2 and 6 are amended to further distinguish the claimed invention from Kimbara. Claims 5 and 9 are amended for grammar. Claim 28 is added.

No new matter is added by this Amendment. Support for the language added to claims 1 and 6 can be found in the specification at, for example, page 14, lines 1-3, page 15, lines 12-14 and Figs. 1 and 6. Support for the language added to claim 2 can be found in the original specification at, for example, page 17, lines 4-6. Support for new claim 28 can be found throughout the original specification and the Figures, and including original claim 1.

I. Rejection Under 35 U.S.C. §102(e)

Claims 1-27 were rejected under 35 U.S.C. §102(e) as allegedly being anticipated by U.S. Patent No. 6,802,875 ("Kimbara"). This rejection is respectfully traversed.

The Patent Office alleges that Kimbara teaches all of the limitations recited in claims 1 and 6. In particular, the Patent Office alleges that Kimbara teaches an auxiliary tank (20) with a heat exchanger and dehydrogenation catalyst. The Patent Office asserts that this auxiliary tank corresponds to the reaction tank containing therein a catalyst and a heater for heating the catalyst as recited in claim 1. The Patent Office further alleges that these teachings of Kimbara also read on claim 6. Applicants respectfully disagree.

Kimbara teaches a hydrogen supply system including a fuel chamber for storing isopropyl alcohol, a dehydrogenation reactor for forming hydrogen gas and acetone gas from isopropyl alcohol, a gas-liquid separator, and a recovery chamber. See the Abstract of Kimbara.

Kimbara does not teach or suggest a reaction tank which contains therein a catalyst and a heater for heating the catalyst as recited in claim 1. The Patent Office alleges that the auxiliary tank of Kimbara corresponds to the reaction tank recited in claim 1. As such, the

auxiliary tank should contain therein a catalyst and a heater to heat the catalyst. This is not the case in Kimbara.

Instead, Kimbara teaches an auxiliary tank connected to the fuel chamber. See column 6, lines 18-19 of Kimbara. The auxiliary tank does not contain therein a catalyst and a heater for heating the catalyst as required in claim 1.

Moreover, Kimbara does not teach or suggest that the heater heats the catalyst. The heat exchanger 23 (allegedly corresponding to the heater recited in claim 1) cools the equilibrium mixture of isopropyl alcohol, acetone and hydrogen as the mixture passes through. The heat exchanger does not heat the catalyst as required in claim 1.

In contrast, the heater and catalyst are in the reaction tank as recited in claim 1. Thus, the fuel in the reaction will be heated along with the catalyst in the reaction tank. Unlike Kimbara, the heater does not cool the fuel mixture as taught by Kimbara.

Further, claims 1 and 6 recite that the fuel forms a liquid-film on the catalyst. The fuel being reacted in liquid film state on the surface of the catalyst improves reactivity in comparison to when the fuel is made to react on the surface of the catalyst in a gaseous state. See page 13, lines 3-25 of the specification. Kimbara does not teach or suggest a reaction tank with a design such that the fuel when added forms a liquid-film on the catalyst as recited in claims 1 and 6.

Furthermore, similar to the recitation of claim 1, Kimbara does not teach or suggest a reaction-regeneration tank which contains therein a catalyst and a heater for heating the catalyst as recited in claim 6. As explained above, Kimbara does not teach or suggest a reaction tank which contains therein a catalyst and a heater for heating the catalyst.

Moreover, Kimbara does not teach or suggest one tank that functions as both a reaction tank and a regeneration tank as required in claim 6. Again, as explained in more

detail above, Kimbara does not teach or suggest that the heater heats the catalyst as recited in claims 1 and 6.

For the foregoing reasons, Applicants submit that Kimbara does not teach or suggest all of the features recited in claims 1-27. Reconsideration and withdrawal of the rejection are thus respectfully requested.

II. Conclusion

In view of the foregoing, it is respectfully submitted that this application is in condition for allowance. Favorable reconsideration and prompt allowance of claims 1-28 are earnestly solicited.

Should the Examiner believe that anything further would be desirable in order to place this application in even better condition for allowance, the Examiner is invited to contact the undersigned at the telephone number set forth below.

Respectfully submitted,

Leana Levin

James A. Oliff
Registration No. 27,075

Leana Levin
Registration No. 51,939

JAO:LL/hs

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OLIFF & BERRIDGE, PLC
P.O. Box 19928
Alexandria, Virginia 22320
Telephone: (703) 836-6400

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